What is claimed is:

1) A Zn-Al eutectoid hot-dip galvanizing bath for stainless steel, where the galvanizing bath further comprises an alloy metal selected from the group consisting of Bi, rare-earth metals (RE's) or Si.

2) The Zn-Al galvanizing bath of claim 1 wherein the concentration of aluminum is from about 22.1% w/w to about 22.7% w/w.

3) The Zn-Al galvanizing bath of claim 2, wherein the concentration of the alloy metal is from about 0.1% w/w to about 0.4% w/w.

4) The Zn-Al galvanizing bath of claim 3, wherein the alloy metal is bismuth in a concentration of about 0.1% w/w.

5) The Zn-Al galvanizing bath of claim 3, wherein the alloy metals are rare earth metals at a total concentration of about 0.3% w/w.

6) The Zn-Al galvanizing bath of claim 5, wherein the rare earth metals consist of La at a concentration of about 0.13% w/w and Ce at a concentration of about 0.19% w/w.

7) The Zn-Al galvanizing bath of claim 3, wherein the alloy metal is Si in a concentration of about 0.3% w/w.

8) The Zn-Al galvanizing bath of claim 2 having a temperatureof about 530°C to about 600°C.

9) The Zn-Al galvanizing bath of claim 8, wherein the dip time for such a bath is from about 60 to about 180 seconds.

10) A hot-dipped galvanized steel coating comprising:

a) an interface layer comprising binary Fe_2Al_5;

b) an intermediate layer comprising a multiphase microstructure and consisting of a phase rich in Al and a phase rich in Zn; and

c) an overlay layer.

11) The hot-dipped galvanized steel coating of claim 10, wherein the coating is selected from the group consisting of Zn-Al, Zn-Al-Bi, Zn-Al-RE and Zn-Al-Si mixtures, and the concentration of the Bi, RE or Si is from about 0.1% w/w to about 0.4% w/w.

12) A process hot-dip galvanization of a steel article comprising the steps of:

(a) forming a Zn-Al galvanizing bath, wherein the concentration of the aluminum is from about 22.1% w/w to about 22.7% w/w;

(b) adding an alloy metal to the galvanizing bath;

(c) heating the bath to a temperature of about 530°C to about 600°C;

(d) galvanizing said steel article by dipping it in the bath for a period of about 60 seconds to 180 seconds.

13) The process of claim 12 where the alloy metal is selected from the group consisting of Bi, rare-earth metals (RE's) or Si.

14) The process of claim 13 wherein the RE's are La and Ce.

15) The process of claim 14 where the alloy metal is in a concentration of about 0.1% w/w to about 0.4% w/w.